

spikes numerous, the stems being sometimes excessively branched above, no good fruit could be found. The plants grows at the head of the Lake in company with *Potamogeton lonchites*, *P. perfoliatus*, *P. compressus*, *P. hydridus*, *P. Claytonii*, *P. pectinatus* and *Bidens Beckii*." Peck in N. Y. State Mus. Rep't 33: 35. 1880. Plants of *P. Robbinsii* were found among Dr. Peck's duplicates; but he does not seem to have saved specimens of any of the other pondweeds observed at Ballston Lake.

Naias flexilis (Willd.) Rost. & Schmidt. Lakes and slow streams. Lake George, 1876 (Hall); E. Lake George; Glen Lake; Hadlock Pond; South Bay; South Beaver Creek and little pond west of R. W. Bakers, Vaughns; Lake Lauderdale; Clarks Pond, plants rather stout; Battenkill River south of Shushan. The plants are usually sterile; but fine fruiting plants were found in Harris Bay, Lake George, Aug. 28, 1899.

The following species and varieties of pondweeds have been found in the state of Vermont. *Potamogeton epihydrus cayugensis* (Wiegand) Bennett; *P. alpinus* Balbis; *P. Faxoni* Morong; *P. angustifolius connecticutensis* (Robbins) Bennett; *P. heterophyllus*, forma *terrestris* Schlecht.; *P. lucens* L.; *P. bupleuroides* Fernald; *P. confervoides* Reichb.; *P. foliosus* Raf.; *P. foliosus niagarensis* (Tuck.) Morong; *P. rutilus* Wulfg.; *P. Vasey*; Robbins; *P. strictifolius* Bennett; *P. pusillus Sturrockii* Bennett; *P. pusillus tenuissimus* Mert. & Koch; *P. filiformis* Pers.; and *Zannichellia palustris* L. Many of these have been found in Lake Champlain and its tributaries: and a more careful survey will probably add several of these to the Lake George region.

HUDSON FALLS, N. Y.

THE DISCOVERY OF ENDOPHYLLUM SEMPERVIVI (ALB. & SCHW.) DEBARY IN NORTH AMERICA

BY GEORGE M. REED

The writer first observed this interesting rust of *Sempervivum* in the alpine garden of the Brooklyn Botanic Garden on April 21, 1917. One plant of *Sempervivum albertnettii* was found to be

infected with the rust while the other plants adjacent proved to be free. Nearby a few plants of *Sempervivum punctatum* were also found to be infected with rust.

An effort was made to determine the origin of the rusted plants in the Garden. The plants of *Sempervivum* were obtained a year earlier from a large nursery in New Jersey. In connection with Dr. E. W. Olive this nursery was visited and the *Sempervivum* beds carefully examined. It was found that a considerable number of the plants of *Sempervivum punctatum* were badly rusted. One rusted plant of *S. albertnettii* and one of an unknown species of *Sempervivum* were also found. The gardeners at the nursery stated that the appearance of the diseased plants had long been familiar to them, although they did not know the true nature of the trouble.

While it was not possible to get exact information it appears that the *Sempervivum* plants at the nursery were obtained from Holland about twelve to fifteen years ago. Apparently the disease did not attract the attention of the gardeners until two or three years after the introduction of the plants. For many years, however, the disease has been conspicuous in the beds and many plants have been rendered worthless. Apparently the disease has been more severe some years than others.

It is perhaps surprising that this European rust should so long escape observation in the United States. The fact that the mycelium is perennial in the tissues of the host makes it possible for the fungus to be readily distributed with the host plant. The appearance of the diseased plants is also quite striking. Generally the inner leaves of the rosette show the evidence of infection. These elongate more than the normal and assume a nearly vertical position; they are a much paler green at the base and are thickened towards the apex. The pycnidia and teleutospore sori are developed just back of the leaf tip, not being found to any considerable extent on the basal part of the leaves. The pycnidia are much more numerous on some leaves than others. The teleutospores germinate readily on soft agar and on the surface of water, typical promycelia with sporidia being developed.